

Response under 37 CFR 1.116

Application No.: 09/269,501

Response to the Office Action dated November 18, 2004

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A liquid crystal display device comprising:

a liquid crystal cell having a liquid crystal layer sealed in-between a pair of transparent substrates thereof, having an electrode on each of the inner surfaces thereof, facing each other;

an absorption-type polarizing film disposed on a visible side of the liquid crystal cell, for transmitting light linearly polarized in a direction parallel with a transmission axis thereof, and absorbing light linearly polarized in a direction orthogonal to the transmission axis thereof;

a reflection-type polarizing film disposed on a side of the liquid crystal cell, opposite from the visible side thereof, for transmitting light linearly polarized in a direction parallel with a transmission axis thereof, and reflecting light linearly polarized in a direction orthogonal to the transmission axis thereof; and

a color filter disposed between the absorption-type polarizing film and the reflection-type polarizing film, for providing color to light transmitted through the color filter,

wherein the reflection-type polarizing film is a sheet-shaped member of a metallic tone and having a ~~specular~~ reflection characteristic which reflects incoming light linearly polarized in a direction orthogonal to the transmission axis toward the incoming side;

the absorption-type polarizing film and the liquid crystal cell are disposed such that lights

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transmitted from visible sides through a voltage applied area and a non-voltage applied area of the liquid crystal cell are linearly polarized in a direction orthogonal to each other and the transmission axis of the reflection-type polarizing film is in a direction substantially parallel with either one of the directions of the linearly polarized lights that are orthogonal to each other; ~~and~~

wherein one of information, such as characters or numbers, and background of the information is displayed in the voltage applied area of the liquid crystal cell, and an other of the information and the background is displayed in the non-voltage applied area of the liquid crystal cell; and

wherein substantially all light falling on the liquid crystal display cell from the visible side and colored by the color filter is reflected by the reflection-type polarizing film and is outgoing to the visible side, in one of a region for displaying of the information and a region for displaying the background.

Claim 2 (Previously Presented): The liquid crystal display device according to Claim 1 further comprising a light absorption film disposed on a side of said reflection-type polarizing film, opposite from a visible side thereof.

Claim 3 (Original): The liquid crystal display device according to Claim 1 further comprising a light scattering film disposed on the visible side of said absorption-type polarizing film.

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Claim 4 (Previously Presented): The liquid crystal display device according to Claim 1 further comprising a light scattering film disposed on the visible side of said absorption-type polarizing film, and a light absorption film disposed on a side of said reflection-type polarizing film, opposite from a visible side thereof.

Claim 5 (Previously Presented): The liquid crystal display device according to Claim 1 further comprising a backlight disposed on a side of said reflection-type polarizing film, opposite from a visible side thereof.

Claim 6 (Original): The liquid crystal display device according to Claim 5 further comprising a translucent film disposed between said reflection-type polarizing film and the backlight.

Claim 7 (Previously Presented): The liquid crystal display device according to Claim 6, wherein the translucent film is an absorption-type polarizing film.

Claim 8 (Previously Presented): The liquid crystal display device according to Claim 1 further comprising a light scattering film disposed on the visible side of said absorption-type polarizing film, and a backlight disposed on a side of said reflection-type polarizing film, opposite from a visible side thereof.

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Claim 9 (Previously Presented): The liquid crystal display device according to Claim 8 further comprising a translucent film disposed between said reflection-type polarizing film and the backlight.

Claim 10 (Previously Presented): The liquid crystal display device according to Claim 9, wherein the translucent film is an absorption-type polarizing film.

Claim 11 (Previously Presented): The liquid crystal display device according to Claim 1, wherein said absorption-type polarizing film is disposed on the visible side of said liquid crystal cell such that the transmission axis of said absorption-type polarizing film is parallel with a direction of long axes of liquid crystal molecules located on the visible side of the liquid crystal layer in said liquid crystal cell while said reflection-type polarizing film is disposed such that the transmission axis thereof is parallel with, or orthogonal to a direction of long axes of liquid crystal molecules located on the side of the liquid crystal layer in said liquid crystal cell, opposite from the visible side thereof.

Claim 12 (Previously Presented): The liquid crystal display device according to Claim 1, wherein said absorption-type polarizing film is disposed on the visible side of said liquid crystal cell such that the transmission axis of said absorption-type polarizing film is orthogonal to a direction of long axes of liquid crystal molecules located on the visible side of the liquid crystal layer in said liquid crystal cell while said reflection-type polarizing film is disposed such that the

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transmission axis thereof is parallel with, or orthogonal to a direction of long axes of liquid crystal molecules located on the side of the liquid crystal layer in said liquid crystal cell, opposite from the visible side thereof.

Claim 13 (Previously Presented): The liquid crystal display device according to Claim 1, wherein said color filter is a selective transmission color filter for transmitting a light component at a specified wavelength only.

Claim 14 (Previously Presented): The liquid crystal display device according to Claim 1, wherein said color filter comprises color filters in plural colors at different specified wavelengths which are arranged in a same plane.

Claim 15 (Previously Presented): The liquid crystal display device according to Claim 1, wherein said color filter comprises color filters in three colors at specified wavelengths of light components in red, green and blue, arranged in a given order repeatedly and regularly.

Claim 16 (Previously Presented): The liquid crystal display device according to Claim 1, wherein said color filter comprises color filters in three colors at specified wavelengths of light components in cyan, magenta and yellow, arranged in a given order repeatedly and regularly.

Claim 17 (Previously Presented): The liquid crystal display device according to Claim 1,

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wherein said color filter is a color polarizing film capable of transmitting a light component of the light linearly polarized in the direction orthogonal to the transmission axis thereof and having a specified wavelength only, and absorbing light components of the light linearly polarized at other wavelengths while transmitting all light components of the light linearly polarized in the direction parallel with the transmission axis thereof.

Claim 18 (Previously Presented): The liquid crystal display device according to Claim 1, wherein said color filter is a multi-layered dielectric coating capable of reflecting a light component of incoming light, and having a specified wavelength, while transmission light components of the incoming light at other wavelengths.

Claim 19 (Previously Presented): The liquid crystal display device according to Claim 1, wherein the liquid crystal layer of said liquid crystal cell is composed of any from among twisted nematic liquid crystals, supertwisted nematic liquid crystals, and guest host liquid crystals.

Claim 20 (Previously Presented): The liquid crystal display device according to Claim 1, wherein said color filter is disposed between said absorption-type polarizing film and said liquid crystal cell.

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Claim 21 (Previously Presented): The liquid crystal display device according to Claim 1, wherein said color filter is disposed between said liquid crystal cell and said reflection-type polarizing film.

Claim 22 (Previously Presented): The liquid crystal display device according to Claim 1, wherein said color filter is disposed between one of the transparent substrates making up said liquid crystal cell and the liquid crystal layer.

23. (Currently Amended) A liquid crystal display device comprising:

a liquid crystal cell having a liquid crystal layer sealed in-between a pair of transparent substrates thereof, having an electrode on each of the inner surfaces thereof, facing each other;

an absorption-type polarizing film disposed on a visible side of the liquid crystal cell, for transmitting light linearly polarized in a direction parallel with a transmission axis thereof, and absorbing light linearly polarized in a direction orthogonal to the transmission axis thereof;

a reflection-type polarizing film disposed on a side of the liquid crystal cell, opposite from the visible side thereof, for transmitting light linearly polarized in a direction parallel with a transmission axis thereof, and reflecting light linearly polarized in a direction orthogonal to the transmission axis thereof; and

a color filter disposed on a visible side of the absorption-type polarizing film, for providing color to light transmitted through the color filter,

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wherein the reflection-type polarizing film is a sheet-shaped member of a metallic tone and having a high reflection characteristic which reflects incoming light linearly polarized in a direction orthogonal to the transmission axis toward the incoming side;

the absorption-type polarizing film and the liquid crystal cell are disposed such that lights transmitted from visible sides through a voltage applied area and a non-voltage applied area of the liquid crystal cell are linearly polarized in a direction orthogonal to each other and the transmission axis of the reflection-type polarizing film is in a direction substantially parallel with either one of the directions of the linearly polarized lights that are orthogonal to each other; ~~and~~

wherein one of information, such as characters or numbers, and background of the information is displayed in the voltage applied area of the liquid crystal cell, and another of the information and the background is displayed in the non-voltage applied area of the liquid crystal cell; and

wherein substantially all light falling on the liquid crystal display cell from the visible side and colored by the color filter is reflected by the reflection-type polarizing film and is outgoing to the visible side, in one of a region for displaying of the information and a region for displaying the background.